



IFW16

RAW SEQUENCE LISTING

DATE: 08/19/2004

PATENT APPLICATION: US/10/031,905

TIME: 11:40:52

Input Set : A:\PF-0721-PCT (sequence listing).txt

Output Set: N:\CRF4\08192004\J031905.raw

2 <110> APPLICANT: INCYTE GENOMICS, INC.
 3 TANG, Y. Tom
 4 HILLMAN, Jennifer L.
 5 BANDMAN, Olga
 6 YUE, Henry
 7 BAUGHN, Mariah R.
 8 LAL, Preeti
 9 LU, Dyung Aina M.
 10 SHAH, Purvi
 11 AZIMZAI, Yalda
 W--> 12 <120> TITLE OF INVENTION: HUMAN SYNTHETASES
 W--> 13 <130> FILE REFERENCE: PF-0721 PCT
 W--> 14 <140> CURRENT APPLICATION NUMBER: To Be Assigned
 C--> 15 <141> CURRENT FILING DATE: 2002-01-18
 16 <150> PRIOR APPLICATION NUMBER: 60/144,992; 60,168,858
 W--> 17 <151> PRIOR FILING DATE: 1999-07-22; 1999-12-02
 W--> 18 <160> NUMBER OF SEQ ID: 30
 19 <170> SOFTWARE: PERL Program
 W--> 20 <210> SEQ ID NO: 1
 21 <211> LENGTH: 1176
 22 <212> TYPE: PRT
 23 <213> ORGANISM: Homo sapiens
 W--> 24 <220> FEATURE:
 25 <221> NAME/KEY: misc_feature
 26 <223> OTHER INFORMATION: Incyte ID No: 1806212CD1
 W--> 27 <400> SEQUENCE: 1
 28 Met Ala Glu Arg Lys Gly Thr Ala Lys Val Asp Phe Leu Lys Lys
 29 1 5 10 15
 30 Ile Glu Lys Glu Ile Gln Gln Lys Trp Asp Thr Glu Arg Val Phe
 31 20 25 30
 32 Glu Val Asn Ala Ser Asn Leu Glu Lys Gln Thr Ser Lys Gly Lys
 33 35 40 45
 34 Tyr Phe Val Thr Phe Pro Tyr Pro Tyr Met Asn Gly Arg Leu His
 35 50 55 60
 36 Leu Gly His Thr Phe Ser Leu Ser Lys Cys Glu Phe Ala Val Gly
 37 65 70 75
 38 Tyr Gln Arg Leu Lys Gly Lys Cys Cys Leu Phe Pro Phe Gly Leu
 39 80 85 90
 40 His Cys Thr Gly Met Pro Ile Lys Ala Cys Ala Asp Lys Leu Lys
 41 95 100 105
 42 Arg Glu Ile Glu Leu Tyr Gly Cys Pro Pro Asp Phe Pro Asp Glu
 43 110 115 120
 44 Glu Glu Glu Glu Glu Glu Thr Ser Val Lys Thr Glu Asp Ile Ile

ENTERED

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45		125		130		135
46	Ile Lys Asp Lys	Ala Lys Gly Lys Lys	Ser Lys Ala Ala	Ala Lys		
47		140		145		150
48	Ala Gly Ser Ser	Lys Tyr Gln Trp Gly	Ile Met Lys Ser	Leu Gly		
49		155		160		165
50	Leu Ser Asp Glu	Glu Ile Val Lys Phe	Ser Glu Ala Glu	His Trp		
51		170		175		180
52	Leu Asp Tyr Phe	Pro Pro Leu Ala Ile	Gln Asp Leu Lys	Arg Met		
53		185		190		195
54	Gly Leu Lys Val	Asp Trp Arg Arg Ser	Phe Ile Thr Thr	Asp Val		
55		200		205		210
56	Asn Pro Tyr Tyr	Asp Ser Phe Val Arg	Trp Gln Phe Leu	Thr Leu		
57		215		220		225
58	Arg Glu Arg Asn	Lys Ile Lys Phe Gly	Lys Arg Tyr Thr	Ile Tyr		
59		230		235		240
60	Ser Pro Lys Asp	Gly Gln Pro Cys Met	Asp His Asp Arg	Gln Thr		
61		245		250		255
62	Gly Glu Gly Val	Gly Pro Gln Glu Tyr	Thr Leu Leu Lys	Leu Lys		
63		260		265		270
64	Val Leu Glu Pro	Tyr Pro Ser Lys Leu	Ser Gly Leu Lys	Gly Lys		
65		275		280		285
66	Asn Ile Phe Leu	Val Ala Ala Thr Leu	Arg Pro Glu Thr	Met Phe		
67		290		295		300
68	Gly Gln Thr Asn	Cys Trp Val Arg Pro	Asp Met Lys Tyr	Ile Gly		
69		305		310		315
70	Phe Glu Thr Val	Asn Gly Asp Ile Phe	Ile Cys Thr Gln	Lys Ala		
71		320		325		330
72	Ala Arg Asn Met	Ser Tyr Gln Gly Phe	Thr Lys Asp Asn	Gly Val		
73		335		340		345
74	Val Pro Val Val	Lys Glu Leu Met Gly	Glu Glu Ile Leu	Gly Ala		
75		350		355		360
76	Ser Leu Ser Ala	Pro Leu Thr Ser Tyr	Lys Val Ile Tyr	Val Leu		
77		365		370		375
78	Pro Met Leu Thr	Ile Lys Glu Asp Lys	Gly Thr Gly Val	Val Thr		
79		380		385		390
80	Ser Val Pro Ser	Asp Ser Pro Asp Asp	Ile Ala Ala Leu	Arg Asp		
81		395		400		405
82	Leu Lys Lys Lys	Gln Ala Leu Arg Ala	Lys Tyr Gly Ile	Arg Asp		
83		410		415		420
84	Asp Met Val Leu	Pro Phe Glu Pro Val	Pro Val Ile Glu	Ile Pro		
85		425		430		435
86	Gly Phe Gly Asn	Leu Ser Ala Val Thr	Ile Cys Asp Glu	Leu Lys		
87		440		445		450
88	Ile Gln Ser Gln	Asn Asp Arg Glu Lys	Leu Ala Glu Ala	Lys Glu		
89		455		460		465
90	Lys Ile Tyr Leu	Lys Gly Phe Tyr Glu	Gly Ile Met Leu	Val Asp		
91		470		475		480
92	Gly Phe Lys Gly	Gln Lys Val Gln Asp	Val Lys Lys Thr	Ile Gln		
93		485		490		495

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```

94 Lys Lys Met Ile Asp Ala Gly Asp Ala Leu Ile Tyr Met Glu Pro
95          500          505          510
96 Glu Lys Gln Val Met Ser Arg Ser Ser Asp Glu Cys Val Val Ala
97          515          520          525
98 Leu Cys Asp Gln Trp Tyr Leu Asp Tyr Gly Glu Glu Asn Trp Lys
99          530          535          540
100 Lys Gln Thr Ser Gln Cys Leu Lys Asn Leu Glu Thr Phe Cys Glu
101          545          550          555
102 Glu Thr Arg Arg Asn Phe Glu Ala Thr Leu Gly Trp Leu Gln Glu
103          560          565          570
104 His Ala Cys Ser Arg Thr Tyr Gly Leu Gly Thr His Leu Pro Trp
105          575          580          585
106 Asp Glu Gln Trp Leu Ile Glu Ser Leu Ser Asp Ser Thr Ile Tyr
107          590          595          600
108 Met Ala Phe Tyr Thr Val Ala His Leu Leu Gln Gly Gly Asn Leu
109          605          610          615
110 His Gly Gln Ala Glu Ser Pro Leu Gly Ile Arg Pro Gln Gln Met
111          620          625          630
112 Thr Lys Glu Val Trp Asp Tyr Val Phe Phe Lys Glu Ala Pro Phe
113          635          640          645
114 Pro Lys Thr Gln Ile Ala Lys Glu Lys Leu Asp Gln Leu Lys Gln
115          650          655          660
116 Glu Phe Glu Phe Trp Tyr Pro Val Asp Leu Arg Val Ser Gly Lys
117          665          670          675
118 Asp Leu Val Pro Asn His Leu Ser Tyr Tyr Leu Tyr Asn His Val
119          680          685          690
120 Ala Met Trp Pro Glu Gln Ser Asp Lys Trp Pro Thr Ala Val Arg
121          695          700          705
122 Ala Asn Gly His Leu Leu Leu Asn Ser Glu Lys Met Ser Lys Ser
123          710          715          720
124 Thr Gly Asn Phe Leu Thr Leu Thr Gln Ala Ile Asp Lys Phe Ser
125          725          730          735
126 Ala Asp Gly Met Arg Leu Ala Leu Ala Asp Ala Gly Asp Thr Val
127          740          745          750
128 Glu Asp Ala Asn Phe Val Glu Ala Met Ala Asp Ala Gly Ile Leu
129          755          760          765
130 Arg Leu Tyr Thr Trp Val Glu Trp Val Lys Glu Met Val Ala Asn
131          770          775          780
132 Trp Asp Ser Leu Arg Ser Gly Pro Ala Ser Thr Phe Asn Asp Arg
133          785          790          795
134 Val Phe Ala Ser Glu Leu Asn Ala Gly Ile Ile Lys Thr Asp Gln
135          800          805          810
136 Asn Tyr Glu Lys Met Met Phe Lys Glu Ala Leu Lys Thr Gly Phe
137          815          820          825
138 Phe Glu Phe Gln Ala Ala Lys Asp Lys Tyr Arg Glu Leu Ala Val
139          830          835          840
140 Glu Gly Met His Arg Glu Leu Val Phe Arg Phe Ile Glu Val Gln
141          845          850          855
142 Thr Leu Leu Leu Ala Pro Phe Cys Pro His Leu Cys Glu His Ile

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```

143      860      865      870
144 Trp Thr Leu Leu Gly Lys Pro Asp Ser Ile Met Asn Ala Ser Trp
145      875      880      885
146 Pro Val Ala Gly Pro Val Asn Glu Val Leu Ile His Ser Ser Gln
147      890      895      900
148 Tyr Leu Met Glu Val Thr His Asp Leu Arg Leu Arg Leu Lys Asn
149      905      910      915
150 Tyr Met Met Pro Ala Lys Gly Lys Lys Thr Asp Lys Gln Pro Leu
151      920      925      930
152 Gln Lys Pro Ser His Cys Thr Ile Tyr Val Ala Lys Asn Tyr Pro
153      935      940      945
154 Pro Trp Gln His Thr Thr Leu Ser Val Leu Arg Lys His Phe Glu
155      950      955      960
156 Ala Asn Asn Gly Lys Leu Pro Asp Asn Lys Val Ile Ala Ser Glu
157      965      970      975
158 Leu Gly Ser Met Pro Glu Leu Lys Lys Tyr Met Lys Lys Val Met
159      980      985      990
160 Pro Phe Val Ala Met Ile Lys Glu Asn Leu Glu Lys Met Gly Pro
161      995      1000      1005
162 Arg Ile Leu Asp Leu Gln Leu Glu Phe Asp Glu Lys Ala Val Leu
163      1010      1015      1020
164 Met Glu Asn Ile Val Tyr Leu Thr Asn Ser Leu Glu Leu Glu His
165      1025      1030      1035
166 Ile Glu Val Lys Phe Ala Ser Glu Ala Glu Asp Lys Ile Arg Glu
167      1040      1045      1050
168 Asp Cys Cys Pro Gly Lys Pro Leu Asn Val Phe Arg Ile Glu Pro
169      1055      1060      1065
170 Gly Val Ser Val Ser Leu Val Asn Pro Gln Pro Ser Asn Gly His
171      1070      1075      1080
172 Phe Ser Thr Lys Ile Glu Ile Arg Gln Gly Asp Asn Cys Asp Ser
173      1085      1090      1095
174 Ile Ile Arg Arg Leu Met Lys Met Asn Arg Gly Ile Lys Asp Leu
175      1100      1105      1110
176 Ser Lys Val Lys Leu Met Arg Phe Asp Asp Pro Leu Leu Gly Pro
177      1115      1120      1125
178 Arg Arg Val Pro Val Leu Gly Lys Glu Tyr Thr Glu Lys Thr Pro
179      1130      1135      1140
180 Ile Ser Glu His Ala Val Phe Asn Val Asp Leu Met Ser Lys Lys
181      1145      1150      1155
182 Ile His Leu Thr Glu Asn Gly Ile Arg Val Asp Ile Gly Asp Thr
183      1160      1165      1170
184 Ile Ile Tyr Leu Val His
185      1175
186 <210> SEQ ID NO: 2
187 <211> LENGTH: 739
188 <212> TYPE: PRT
189 <213> ORGANISM: Homo sapiens
W--> 190 <220> FEATURE:
191 <221> NAME/KEY: misc_feature

```

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192 <223> OTHER INFORMATION: Incyte ID No: 2083883CD1

W--> 193 <400> SEQUENCE: 2

```

194 Met Asp Ala Leu Lys Pro Pro Cys Leu Trp Arg Asn His Glu Arg
195   1           5           10           15
196 Gly Lys Lys Asp Arg Asp Ser Cys Gly Arg Lys Asn Ser Glu Pro
197           20           25           30
198 Gly Ser Pro His Ser Leu Glu Ala Leu Arg Asp Ala Ala Pro Ser
199           35           40           45
200 Gln Gly Leu Asn Phe Leu Leu Leu Phe Thr Lys Met Leu Phe Ile
201           50           55           60
202 Phe Asn Phe Leu Phe Ser Pro Leu Pro Thr Pro Ala Leu Ile Cys
203           65           70           75
204 Ile Leu Thr Phe Gly Ala Ala Ile Phe Leu Trp Leu Ile Thr Arg
205           80           85           90
206 Pro Gln Pro Val Leu Pro Leu Leu Asp Leu Asn Asn Gln Ser Val
207           95          100          105
208 Gly Ile Glu Gly Gly Ala Arg Lys Gly Val Ser Gln Lys Asn Asn
209          110          115          120
210 Asp Leu Thr Ser Cys Cys Phe Ser Asp Ala Lys Thr Met Tyr Glu
211          125          130          135
212 Val Phe Gln Arg Gly Leu Ala Val Ser Asp Asn Gly Pro Cys Leu
213          140          145          150
214 Gly Tyr Arg Lys Pro Asn Gln Pro Tyr Arg Trp Leu Ser Tyr Lys
215          155          160          165
216 Gln Val Ser Asp Arg Ala Glu Tyr Leu Gly Ser Cys Leu Leu His
217          170          175          180
218 Lys Gly Tyr Lys Ser Ser Pro Asp Gln Phe Val Gly Ile Phe Ala
219          185          190          195
220 Gln Asn Arg Pro Glu Trp Ile Ile Ser Glu Leu Ala Cys Tyr Thr
221          200          205          210
222 Tyr Ser Met Val Ala Val Pro Leu Tyr Asp Thr Leu Gly Pro Glu
223          215          220          225
224 Ala Ile Val His Ile Val Asn Lys Ala Asp Ile Ala Val Val Ile
225          230          235          240
226 Cys Asp Thr Pro Gln Lys Ala Leu Val Leu Ile Gly Asn Val Glu
227          245          250          255
228 Lys Gly Phe Thr Pro Ser Leu Lys Val Ile Ile Leu Met Asp Pro
229          260          265          270
230 Phe Asp Asp Asp Leu Lys Gln Arg Gly Glu Lys Ser Gly Ile Glu
231          275          280          285
232 Ile Leu Ser Leu Tyr Asp Ala Glu Asn Leu Gly Lys Glu His Phe
233          290          295          300
234 Arg Lys Pro Val Pro Pro Ser Pro Glu Asp Leu Ser Val Ile Cys
235          305          310          315
236 Phe Thr Ser Gly Thr Thr Gly Asp Pro Lys Gly Ala Met Ile Thr
237          320          325          330
238 His Gln Asn Ile Val Ser Asn Ala Ala Ala Phe Leu Lys Cys Val
239          335          340          345
240 Glu His Ala Tyr Glu Pro Thr Pro Asp Asp Val Ala Ile Ser Tyr

```

RAW SEQUENCE LISTING ERROR SUMMARY
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Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:12; Xaa Pos. 63,64,65

Seq#:27; N Pos. 193,196,197,198

VERIFICATION SUMMARY

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Input Set : A:\PF-0721-PCT (sequence listing).txt

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L:12 M:283 W: Missing Blank Line separator, <120> field identifier
L:13 M:283 W: Missing Blank Line separator, <130> field identifier
L:14 M:283 W: Missing Blank Line separator, <140> field identifier
L:14 M:270 C: Current Application Number differs, Replaced Current Application Number
L:15 M:271 C: Current Filing Date differs, Replaced Current Filing Date
L:17 M:256 W: Invalid Numeric Header Field, Wrong Prior FILING DATE:YYYY-MM-DD
L:18 M:283 W: Missing Blank Line separator, <160> field identifier
L:20 M:283 W: Missing Blank Line separator, <210> field identifier
L:24 M:283 W: Missing Blank Line separator, <220> field identifier
L:27 M:283 W: Missing Blank Line separator, <400> field identifier
L:190 M:283 W: Missing Blank Line separator, <220> field identifier
L:193 M:283 W: Missing Blank Line separator, <400> field identifier
L:298 M:283 W: Missing Blank Line separator, <220> field identifier
L:301 M:283 W: Missing Blank Line separator, <400> field identifier
L:386 M:283 W: Missing Blank Line separator, <220> field identifier
L:389 M:283 W: Missing Blank Line separator, <400> field identifier
L:416 M:283 W: Missing Blank Line separator, <220> field identifier
L:419 M:283 W: Missing Blank Line separator, <400> field identifier
L:510 M:283 W: Missing Blank Line separator, <220> field identifier
L:513 M:283 W: Missing Blank Line separator, <400> field identifier
L:606 M:283 W: Missing Blank Line separator, <220> field identifier
L:609 M:283 W: Missing Blank Line separator, <400> field identifier
L:712 M:283 W: Missing Blank Line separator, <220> field identifier
L:715 M:283 W: Missing Blank Line separator, <400> field identifier
L:806 M:283 W: Missing Blank Line separator, <220> field identifier
L:809 M:283 W: Missing Blank Line separator, <400> field identifier
L:882 M:283 W: Missing Blank Line separator, <220> field identifier
L:885 M:283 W: Missing Blank Line separator, <400> field identifier
L:956 M:283 W: Missing Blank Line separator, <220> field identifier
L:959 M:283 W: Missing Blank Line separator, <400> field identifier
L:1000 M:283 W: Missing Blank Line separator, <220> field identifier
L:1003 M:283 W: Missing Blank Line separator, <220> field identifier
L:1007 M:283 W: Missing Blank Line separator, <400> field identifier
L:1016 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:12 after pos.:60
L:1086 M:283 W: Missing Blank Line separator, <220> field identifier
L:1089 M:283 W: Missing Blank Line separator, <400> field identifier
L:1156 M:283 W: Missing Blank Line separator, <220> field identifier
L:1159 M:283 W: Missing Blank Line separator, <400> field identifier
L:1218 M:283 W: Missing Blank Line separator, <220> field identifier
L:1221 M:283 W: Missing Blank Line separator, <400> field identifier
L:1272 M:283 W: Missing Blank Line separator, <220> field identifier
L:1275 M:283 W: Missing Blank Line separator, <400> field identifier
L:1346 M:283 W: Missing Blank Line separator, <220> field identifier
L:1349 M:283 W: Missing Blank Line separator, <400> field identifier
L:1410 M:283 W: Missing Blank Line separator, <220> field identifier
L:1413 M:283 W: Missing Blank Line separator, <400> field identifier
L:1451 M:283 W: Missing Blank Line separator, <220> field identifier
L:1454 M:283 W: Missing Blank Line separator, <400> field identifier

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L:1495 M:283 W: Missing Blank Line separator, <220> field identifier
L:1498 M:283 W: Missing Blank Line separator, <400> field identifier
L:1543 M:283 W: Missing Blank Line separator, <220> field identifier
L:1546 M:283 W: Missing Blank Line separator, <400> field identifier
L:1587 M:283 W: Missing Blank Line separator, <220> field identifier
L:1590 M:283 W: Missing Blank Line separator, <400> field identifier
L:1801 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:27 after pos.:180